

# SOMETHING WICKED THIS WAY COMES

**FIRST LOOK TVR SPEED 12** Nothing will prepare prospective owners for TVR's monstrous Speed 12. So Steve Cropley fans the flames



Since we first got wind of TVR's latest earthquake-bomb GT car, the 7.7-litre, 660bhp Speed 12, we've been trying to come up with ways for budding owners to prepare themselves for its titanic performance. So far, we've not come up with much.

A fast turn in something like a Ferrari F355 won't help. The TVR has nearly three times the Ferrari's power-to-weight ratio. Same for a Lamborghini Diablo SV, a Ferrari 550 Maranello and even a Jaguar XJ220. Only a McLaren F1 comes close – and its 550bhp per tonne is still 20 per cent behind the TVR's figure of 660. Perhaps the aspiring Speed 12 driver should strap himself into a racing seat and arrange to be ejected from the top of an erupting volcano.

TVR has never been shy about making fast cars. But the Speed 12 is its fastest ever by

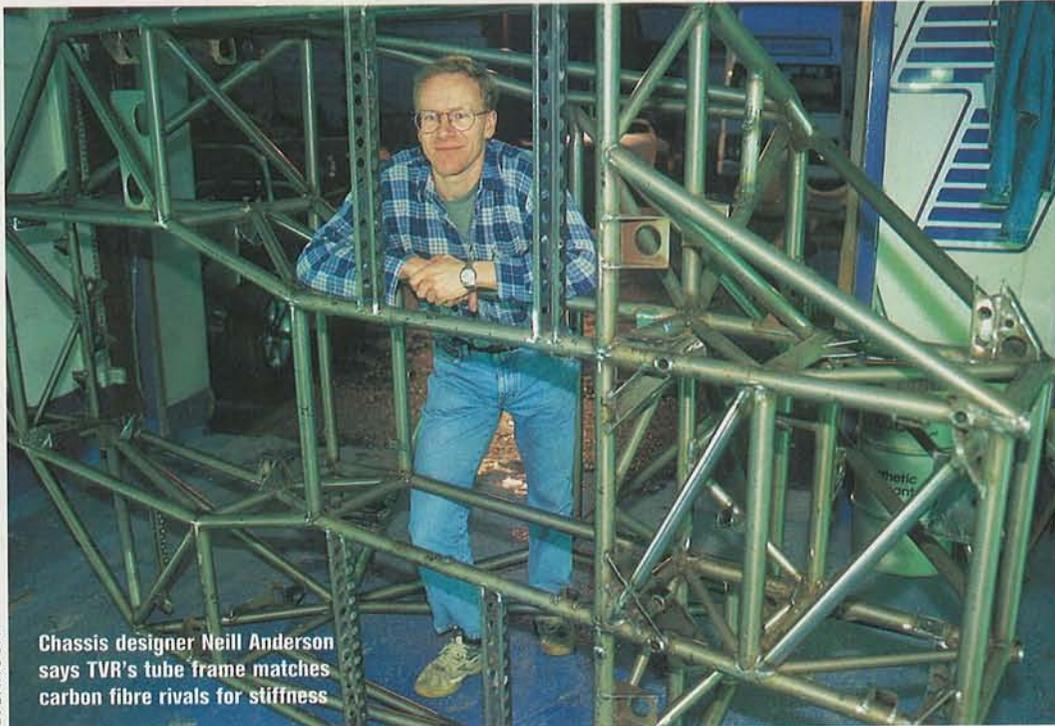
some margin. Comparison with Jaguar's XJ220 probably makes the most sense. According to TVR boss Peter Wheeler, the 12 is primarily a racing car, built to run in both the FIA and British GT championships. But despite this, the Speed 12 has clearly been built as a road car. Wheeler has already said he intends to make roughly one road-going version a month "for friends".

The car is styled as a radical road machine, avoiding the long, impractical rear overhang a pure-bred racer would have. The Speed 12 also has a properly styled interior (similar to the Tuscan Speed Six), which is a rarity for a full-house GT. Even at the cost of reducing race-pit access to the car, Wheeler has instructed his designers that it must have proper, production car apertures and shutlines, not just the detachable one-piece front and rear sections that make more racing sense.

Road car customers will get the same car as TVR's race team, and will be charged a comparatively paltry £150,000 for the pleasure. "We've calculated the price on our usual cost-plus basis," says Wheeler, with typical candour. Several loyal TVR stalwarts, notably Liam Howlett and Keith Flint from the group The Prodigy, placed Speed 12 orders months ago.

Nobody at Blackpool is bothering to forecast the Speed 12's performance with pinpoint accuracy, mainly because the V12's output isn't confirmed. It could go as high as 800bhp. The figure of 660bhp previously quoted includes FIA-legislated intake restrictors. But company sources reckon the car should top 210mph, and better the McLaren F1's acceleration times. That means a 0-100mph sprint in around six seconds – or perhaps a little less.

Cabin similar to new Tuscan Speed Six, but diagonal chassis frame will bisect door opening



Chassis designer Neill Anderson says TVR's tube frame matches carbon fibre rivals for stiffness

IAN DAWSON

## "Speed 12's power to weight ratio is three times that of..."

### TVR: LOUD CARS, QUIET ACHIEVEMENTS



TVR boss, ex-oilman Peter Wheeler

TVR's cars may be noisy, but the company makes progress quietly. This reflects the character of Peter Wheeler, the ex-oilman who acquired TVR in 1981, and has since increased its annual turnover 10-fold, to £50 million.

Wheeler is a seemingly impossible combination of introvert (hates talking about his achievements) and extrovert (loves driving big-engined sports

cars). He never makes long-term plans, and his 600-odd employees don't have titles.

Yet it all works. Employee morale is sky-high and customers keep piling in. Last time *Autocar* met Peter Wheeler – a couple of years ago – he reckoned the 1000 cars he was building annually was about right. But 1997 production will top 1750, and Wheeler knows he'll do

2000 next year, because there's a name on every TVR he can make between now and the middle of next year – and that's before the Tuscan Speed Six.

The secret, Wheeler believes, is in making what people want. "Our customers are friends; we give them what they ask for. If they don't ask, we don't build. I can't understand why everyone doesn't operate that way."



of a Ferrari F355. Only the McLaren F1 comes close”



Coil suspension units are mounted inboard and anchored to the car's centre

The Speed 12 is mostly the work of the Blackpool company's "usual suspects". The body shape is heavily influenced by Wheeler himself, working with a couple of in-house designers. The V12 engine is being designed and developed by John Ravenscroft (using early influences from MCD's Al Melling, who penned the AJP8, the first of TVR's own engines). The chassis designer is Neill Anderson, another TVR stalwart.

The Speed 12's mighty engine is remarkable for more than its total power. Its banks are inclined at 90 degrees, instead of the 60 degrees which is usual for a V12, but designer John Ravenscroft insists it will be in balance. The capacity is 7.7 litres, with bore and stroke about equal. The block and crankcase are both fabricated by hand entirely from sheet steel – a prodigious achievement. They contain shrink-fit steel liners and a crankshaft milled ▶

◆ from a solid steel billet.

Fabricated engines are not unknown in very low-volume production runs: both Jaguar and Ferrari have used them. But they are rare. TVR says doing it that way allows tight control of the project, quick modification of the spec and probably makes the engine more rigid, notably compact, but mechanically noisier. The two cast alloy heads, designed by Melling, are the same as that fitted to the Speed Six. Each has its two overhead camshafts

driven by a toothed belt, saving the weight and complication of the AJP8's gear train. The cams drive four valves per cylinder via finger followers rather than hydraulic tappets. Finger followers need shim adjustment every 10,000 miles or so, but require smaller springs to control the valves, so overall mechanical losses are much lower. Induction is by electronic fuel injection, the race version fitted with inlet restrictors whose size will be determined by the car's starting grid weight.

"If we hit our target weight, the power will probably be held at about 660bhp," says Ravenscroft. "We've given ourselves a lot of engine capacity to make sure the torque spread is wide."

The Speed 12's prodigious power and torque will flow through a new TVR gearbox. The Blackpool company recently joined forces with Ken Costello, the gearbox expert and developer of the first MGB V8, and now counts his facilities at Gravesend, Kent, as one of its



Rigid driver cage came first; tube chassis was designed around it

## "Road car customers get the same car as TVR's rac



Speed 12's styling avoids racing car-style rear overhang; it looks more like a radical road machine.

production sites. Costello will make gearboxes for ordinary TVRs, and is at work on a much stronger five-speed unit for use in the Speed 12.

In its layout, the Speed 12 is a conventional TVR – a front-engine, rear-drive car with a triangulated tubular chassis and all-independent suspension. Why the use of tubes for the chassis? Because that's where Blackpool's expertise lies. Peter Wheeler is a profound believer in the system, claiming it can perform as well as more

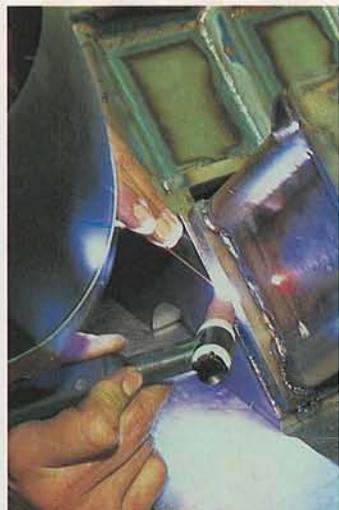
fashionable and high-tech carbon monocoques. "It depends where you run the tubes," he says. "With the Speed 12, we've got one running diagonally across the door aperture, which makes access a bit difficult but does keep the car very rigid."

Chassis designer Neill Anderson claims his car matches its carbon fibre rivals, with a torsional stiffness of over 40,000lb per degree. It's as light as they are, and quite a lot cheaper. "We believe we can keep the Speed 12's all-up



Typically striking TVR headlight shapes dominate new car's frontal styling

## team, and will pay a comparatively paltry £150,000"



Crankcase entirely hand fabricated

weight under 1000kg," says Anderson, "which ought to make us pretty competitive." A road-going McLaren F1 weighs 1150kg, an XJ220 is 1450kg, while a 550M is just under 1700kg. Under current GT legislation, a light car's power is limited (by restrictors in its induction system), but Anderson believes lightness still brings benefits in agility and brake performance.

"We've changed our chassis design philosophy quite a bit for the new car," Anderson explains. "For the racing Cerbera we used our tubular backbone chassis and added a driver cage. For the Speed 12, we started by building a rigid cage, and we've reduced the importance the backbone plays in the car's rigidity. What we've finished up with is light, simple but very stiff."

Suspension is all-independent by wide-based race-theory double wishbones and anti-roll bars at both ends. Its coil-over suspension units are laterally mounted inboard, and are anchored into the centre of the car, controlling the wheels by pushrod. The system is similar

to that developed for the racing Cerbera; with typical TVR practicality, Neill Anderson sees little need to change it. The wheels are OZ or Speedline (decision still to be taken) and the brakes are mighty six-pot ventilated affairs from AP Racing. Steering is power-assisted rack and pinion, a system manufactured by TVR.

Speed 12 sits on a Cerbera wheelbase and is very similar in height, but about three inches shorter because its rear overhang is shorter. This compactness contrasts with the approach of purist GT builders such as Panoz, whose front-engined car has a long tail for optimum aerodynamics, but whose body design takes no account of road car issues such as cabin ventilation or engine access. "We'll be testing Speed 12 in the wind tunnel soon after Christmas," says Neill Anderson. "We'll be tuning it for downforce and stability, but the basic shape won't change."

Peter Wheeler agrees that his preference for a road car shape may cost him some speed on the track, but claims the main competitiveness issue is in the

hands of Max Mosley, the FIA president. "If GT cars run zero ground clearance, the way they did this year, then we won't be very competitive," he says. "But if they run half-sensible clearance they're like F1 cars – fully compressed at 30mm and with flat bottoms – and we'll be in the running."

For owners of Speed 12 road cars, this won't matter. Clearance will be minimal and the nose spoiler will crunch regularly, but other compromises may intrude more. Such as the bellowing engine, the minimal padding of the race buckets, the restrictions of the five-point harness and, of course, the difficulty of getting in and out of a cabin with a fat chassis tube running diagonally across its door aperture.

But for some owners – the sort TVR has been encouraging for years – these things will be nothing but encouragement. We believe Peter Wheeler has a Speed 12 problem waiting. He's going to find that his projected one dozen cars a year won't go anywhere near satisfying the clamour, even at £150,000 a copy. ●



Dynamometer testing carried out on just one bank of six cylinders at a time